What is claimed is:

1). A method for high throughput assay of genetic analysis, comprising the steps of:

(a) preparing target specific primer sets;

(b) performing primer extension;

(c) distinguishing the extended products containing the labeled nucleotide from the extended products without labeled nucleotide and from non-extended primers; and

(d) detect the labeled product from primer extension left on the solid support.

2). The method according to claim 1, wherein said primer sets are paired primers.

3). The method according to claim 1, wherein said primer sets are unpaired primers.

4). The method according to claim 1, wherein said primer sets are unlabeled.

5). The method according to claim 1, wherein said primer is unmodified oligonucleotides.

6). The method according to claim 1, wherein said primer is modified oligonucleotides.

7). The method according to claim 1, wherein said primer is labeled at the 3' terminals.

8). The method according to claim 1, wherein said primer is labeled at more than one nucleotides.

9). The method according to claim 1, wherein said target specific primers sets are primers consisting of different subsets of primers with similar nucleotide sequences except at least having one mismatched nucleotide A, T, C, G respectively.

10). The method according to claim 9, wherein said target specific primer sets are immobilized on a solid support before primer extension.

11). The method according to claim 9, wherein said target specific primer sets are added into a liquid phase for primer extension.

12). The method according to claims 10, wherein said primer extension is solid phase primer extension.

13). The method according to claims 10, wherein said primer extension is cascade primer extension.

14). The method according to claims 10, wherein said primer extension is post-hybridization primer extension.

15). The method according to claim 1, wherein said primer extension is performed at 37 degree centigrade.

16). The method according to claim 1, wherein said primer extension is performed at temperature higher than 37 degree centigrade.

17). The method according to claim 1, wherein said primer extension is performed with DNA polymerase including DNA dependent DNA polymerase and RNA dependent DNA polymerase.

18). The method according to claim 1, wherein said primer extension is performed using unlabeled substrates of dNTPs.

19). The method according to claim 1, wherein said primer extension is performed using unlabeled dNTPs mixed with labeled nucleotides.

20). The method according to claim 1, wherein said extended product containing labeled nucleotide is separated from the un-extended primer using enzymatic treatment.

21). The method according to claim 1, wherein said extended product containing labeled nucleotide is mechanically separated from the un-extended primer.

22). The method according to claim 1, wherein said extended product containing labeled nucleotide is distinguished from the extended product without labeled nucleotide by visualization and detection.